Ron Buckhalt
Director, Communications

2002 Farm Bill

Mandatory Procurement of Biobased Products

Long Beach, CA
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TITLE IX. Energy

- Federal Procurement of biobased products
- Biorefinery development grants
- Biodiesel fuel education programs
- Energy audit and renewable energy development program
- Renewable energy systems and energy efficiency improvements
- Hydrogen and fuel cell technologies
- Biomass research and development
- Continuation of bioenergy program
- Cooperative research and extension projects

Provision of Title IX

- Under Section 9002 USDA will:
  - develop guidelines for designating biobased products;
  - publish a list of biobased products for federal purchase;
  - issue criteria for being placed on the Designated Biobased Products List (DBPL); and
  - establish a voluntary USDA labeling program.

Guidelines To be Placed on DBPL

- Will include:
  - content verification, voluntary until ASTM standard is finalized;
  - environmental certification through NIST, BEES model;
  - performance requirements; and
  - assurance that products are available.

Voluntary USDA Label

- Labeling program is voluntary
- Must complete same (no additional) requirement as those to be placed on the DBPL
- Vendors must request label
  - Will be self-supporting (user fee)
  - Management is still an issue (contract or inside USDA)

Federal Agencies Will:

- give preference to products on DBPL;
- incorporate preference in existing procurement guidelines;
- establish agency preferential procurement programs; and
- require use of biobased products to maximum extent (price, performance, availability).

Progress on Process

- Cooperative agreement with Iowa State University
  - Create a management information system
    - Create DBPL
  - Establish capability for testing
  - Provide testing services
  - Testing partnerships

Other Progress

- Agreement with NIST to develop additional models on eight commodities
  - Corn, wheat/wheat straw, rice straw , cotton, wool, starch from plants, soybeans, canola
  - USDA is subsidizing BEES modeling
  - Also subsidizing actual BEES testing for small manufacturers.

ASTM International

- Founded in 1898, ASTM International is a not-for-profit organization that provides a global forum for the development and publication of voluntary consensus standards for materials, products, systems, and services.Over 30,000 individuals from 100 nations are the members of ASTM International, who are producers, users, consumers, and representatives of government and academia. In over 130 varied industry areas, ASTM standards serve as the basis for manufacturing, procurement, and regulatory activities. Formerly known as the American Society for Testing and Materials, ASTM International provides standards that are accepted and used in research and development, product testing, quality systems, and commercial transactions around the globe.

BEES

- **Over the last seven years, the National Institute of Standards and Technology has developed and automated an approach for measuring the life-cycle environmental and economic performance of building products. Known as BEES™ (Building for Environmental and Economic Sustainability), the tool is based on consensus standards and designed to be practical, flexible, and transparent. BEES reduces complex, science-based technical content (e.g., up to 400 material and energy flows from raw material extraction through product disposal) to decision-enabling results and delivers them in a visually intuitive graphical format.**

Eleven Biobased Categories

- Adhesives
- Construction Composites
- Fuel Additives
- Landscaping Products/Compost
- Lubricants/ Functional Fluids
- Materials/Fibers /Papers /Packing
- Paints and Coatings
- Plastics
- Solvents/Cleaners and Ag Chemicals
- Sorbents
- Vegetable Oil Inks

Adhesives

- Feedstock Sources include:
  - starch from corn, potatoes, wheat, tapioca, other plants;
  - casein from skimmed milk;
  - soybean oil or protein;
  - vegetable gums;
  - livestock derivatives; and
  - marine animal derivatives.

Adhesive

- Products include:
  - book bindings, envelopes, stamps, medical applications such as tapes and alternatives to sutures, doors, windows, paper bonds, corrugated paper boxes, lumber, furniture;
  - biobased pressure sensitive adhesives developed for clear tape, duct tape, masking tape, labels, disposable items; and
  - soy-based adhesives to glue wood—finger-jointed lumber, beams, I-joists, etc.

Construction Materials and Composites

- Raw materials include:
  - woody and non-woody plants, residues, kenaf, sugar cane bagasse, guayule, bamboo, cereal grain straws, corn stover, vegetable fiber, soybeans and others.
  - Wood would come from forest thinnings, regenerated forest stands, intensively cultivated short rotation trees, post-consumer recovered wood from demolition or paper.

Construction Materials and Composites

- Products include:
  - molding and trim; roof and floor trusses; wall systems made from compressed cereal straws or other ag fibers; composites from soy or other vegetable proteins; molded furniture; ag fibers combined with recycled plastic.
  - those using biobased adhesives—lumber, OSB, fiberboard, laminated beams, decorative composites.
  - construction materials using biobased polyurethane—carpet backing, foam cushions, padding, car seats/parts, molded packing, bioplastic and rigid foams, insulation.

Fibers, Paper and Packaging

- Raw material sources include:
  - agricultural crops, forest biomass, livestock, bamboo, corn stover, low grade cotton, flax, kenaf, cereal straw, saw dust, sugar cane bagasse, switch grass, leaves, wood thinnings, feathers, and wool.

Fibers, Paper and Packaging

- Products include:
  - tree-free paper from kenaf, cotton linters, corn stover, chicken feathers, other agricultural fibers;
  - ropes, textiles and yarns from non-traditional fibers;
  - bulk packing materials, “peanuts” and molded fibers; and
  - paperboard made from residues or recycled sources.

Fuel Additives

- Raw materials include:
  - (for liquid fuels) corn, soy, rapeseed, animal fat, wood and crop processing residues such as stalks, hulls, manure, used cooking oils, non-recyclable paper and paper sludge.
  - (for solid fuels) forest and wood processing residues, non-recyclable paper and paper sludge, and agricultural processing residues.

Fuel Additives

- Products include:
  - liquid--ethanol, biodiesel;
  - solid—formed agricultural and forest residues—pellets, rolls, and briquettes;
  - binders to allow fuel to be shaped.
- **Note: There is no preference for biobased fuels in Section 9002, however USDA has long supported the purchase of such fuels and will continue to do so.**

Landscaping Material and Compost

- Sources include:
  - agricultural crops and residues, construction materials, coatings, fibers, sorbents, food scraps, leaves, paper, and manures.

Landscaping Material and Compost

- Examples include:
  - barks, chips, mulch, pine needles, straw, composted manures and other green wastes as soil amendments.

Lubricants and Functional Fluids

- Sources include:
  - seed-based oils such as canola, corn, rapeseed, soybean, sunflower, canola, and animal fats.

Lubricants and Functional Fluids

- Products include:
  - crankcase oils and greases, transmission fluids, coolants, power steering fluids, brake fluids;
  - cutting and drilling oils, stamping and forming lubricants;
  - hydraulic fluids and process fluids (heat transfer and dielectric);
  - total loss lubricants—rail and flange, wire rope, chain saw, form release, two-cycle engines, all purpose, and food service equipment.

Bioplastics

- Raw materials include:
  - cellulose, starch, protein, and oils from plants used to make propane diol, lactic acid, and polyurethanes.

Bioplastic

- Products include:
  - biodegradable foams used in food packaging;
  - durable foams used as insulation and cushioning in appliances, cushions, molded dashboards, furniture;Biodegradable plastic films;
  - durable films/coatings—automotive and construction equipment, tools, electrical equipment and appliances;
  - water soluble polymers—water clean up;

Bioplastic Products continued…

- biodegradable/compostable molded products such as table flat ware, knives, spoons, and forks;
- durable molded plastic products—thermoset automotive parts, and equipment, hoods, doors, access panels for equipment;
- molded composites—automobile door panels and trunk liners; and
- woven fibers to function similarly to nylon in textiles and carpeting.

Paints and Coatings

- Sources include:
  - xanthan gum to thicken paints and coatings, suspend metal additives in corrosion control paints;
  - cellulose esters and ethers to make lacquers and paints;
  - guayule derived epoxy-amine to make coatings for metal panels;
  - corn, soy, wheat and other proteins to make coatings for paper and cardboard; and
  - vegetable oils as plasticizers and intermediate chemicals to make paint.

Paints and Coatings

- Products include:
  - seed coatings for germination, marine coatings, concrete and wood sealers, stains, corrosion inhibitors, polishes, paints and lacquers.

Solvents and Cleaners

- Sources include:
  - soy, corn and livestock.

Solvents and Cleaners

- Products include:
  - replacements for petro chemicals like mineral spirits, ketones, acetone, trichloroethylene, xylene, toluene, and methyl chloride; and
  - those used for fabric and textile cleaning; fruit and vegetable cleaning; removal of grease, tar, oil, stains, paints from concrete and metal surfaces; paint strippers for metals and woods; carpet and upholstery cleaner; solvent for inks, paints, lotions, polishes; agricultural chemicals; graffiti remover, industrial parts cleaning.

Sorbents

- Sources include:
  - (but are not limited to) wool, cotton and cotton linters, vegetable starch, kenaf, and agricultural residues such as corn stover and peanut hulls.

Sorbents

- Products include:
  - animal bedding, industrial sorbents, seed coatings, wound dressings, fuel filters, disposable diapers, etc.

Vegetable Oil Inks

- Sources include:
  - mostly soy but also other plant and vegetable oils.

Vegetable Oil Inks

- Products printed include:
  - newspapers, magazines, brochures, business cards, reports, stencils, textiles, labeling;
  - pens and other writing instruments.
  - Vegetable Printing Act of 1994 (P.L. 103-348) mandates all federal lithographic printing be performed using such ink.

Ron Buckhalt

Director, Communications

1400 Independence Ave., SW
Jamie L. Whitten Building, Room 216W
Washington, DC 20250-0110
T: (202) 720-8885
F: (202) 690-2842
E-mail: ron.buckhalt@usda.gov